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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,322	09/16/2003	John D. Hottovy	CPCM:0017/FLE 210328US1	1334

7590 05/20/2005

Attn: Michael G. Fletcher  
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Houston, TX 77269-2289

EXAMINER

DOROSHENK, ALEXA A

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/663,322

Applicant(s)

HOTTOVY ET AL.

Examiner

Alexa A. Doroshenk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 and 53-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-38 and 53-65 is/are allowed.
- 6) ☒ Claim(s) 66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on October 1, 2004. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 66 is rejected under 35 U.S.C. 102(b) as being anticipated by Foster (4,740,550).

With respect to claim 66, Foster discloses an apparatus which comprises:

a pipe loop reactor (1) for polymerization with a monomer feed (9), catalyst feed (5) and a product take-off (line, not numbered, connected to hydroclone 10) attached thereto; and

at least one mixed flow pump (3) (col. 7, lines 52-54) disposed within the pipe loop reactor (1).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hottovy et al. (US 6,239,235 B1) in view of Foster (4,470,550).

Hottovy et al. discloses:

a loop polymerization loop reactor (10);

means for introducing monomer (26/28);

means for introducing catalyst (32);

means for removing product (34) from the continuous flow path (10); and

at least one flow pump impeller (22) disposed in the flow path of the reactor (10).

Hottovy et al. fails to disclose any specific type of flow pump, such as if it is axial or mixed flow.

Foster discloses a loop polymerization reactor with a pump disposed therein and teaches that the pump preferably is an axial flow or mixed flow pump to minimize fouling. It would have been obvious to one of ordinary skill in the art at the time the invention was made select a mixed flow pump for the pump of Hottovy et al. in order to minimize fouling as taught by Foster.

6. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hottovy et al. (5,183,866) in view of Foster (4,470,550).

Hottovy et al. discloses:

a loop polymerization loop reactor (10);

means for introducing monomer (14);

means for introducing catalyst (17);

means for removing product (18) from the continuous flow path (10); and

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at least one flow pump impeller (11) disposed in the flow path of the reactor (10).

Hottovy et al. fails to disclose any specific type of flow pump, such as if it is axial or mixed flow.

Foster discloses a loop polymerization reactor with a pump disposed therein and teaches that the pump preferably is an axial flow or mixed flow pump to minimize fouling. It would have been obvious to one of ordinary skill in the art at the time the invention was made select a mixed flow pump for the pump of Hottovy et al. in order to minimize fouling as taught by Foster.

7. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson (5,575,979) in view of Foster (4,470,550).

Hanson discloses:

a loop polymerization loop reactor (10);

means for introducing monomer (14);

means for introducing catalyst (20);

means for removing product (22) from the continuous flow path (10); and

at least one flow pump impeller (12) disposed in the flow path of the reactor (10).

Hanson fails to disclose any specific type of flow pump, such as if it is axial or mixed flow.

Foster discloses a loop polymerization reactor with a pump disposed therein and teaches that the pump preferably is an axial flow or mixed flow pump to minimize fouling. It would have been obvious to one of ordinary skill in the art at the time the

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invention was made select a mixed flow pump for the pump of Hanson in order to minimize fouling as taught by Foster.

***Allowable Subject Matter***

8. Claims 1-38 and 53-65 are allowed.

***Response to Arguments***

Drawings

The objection to the drawings is withdrawn due to applicant's amendments.

Specification

The objection to the specification is withdrawn due to applicant's amendments.

Independent Claim 1

Applicant argues that the impellers of Kendrick are off-set and therefor do not "face each other" and are also not spaced sufficiently close so that one impeller benefits from the rotation energy of the other of the impellers.

The examiner agrees and withdraws the rejection of claim 1.

Independent Claim 66

Applicant argues that the references cited by the examiner do not disclose a "mixed flow pump" within the loop reactor.

The examiner agrees with applicant and has presented new rejections above.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-

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272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexa A. Doroshenk  
Primary Examiner  
Art Unit 1764